

IN THE SPECIFICATION (as originally filed):

On page 1, after line 2 please insert the following:

This is the U.S. national phase of International Application No. PCT/DE03/02693 filed August 7, 2003, the entire disclosure of which is incorporated herein by reference.

BACKGROUND OF THE DISCLOSURE

The heading beginning on page 1, line 5 has been changed as follows:

Description: Field of the Disclosure

The paragraph beginning on page 1, line 7 has been changed as follows:

The ~~invention~~ disclosure relates to a method and a system for data transmission between a parcel compartment system and at least one central data processing unit in a logistic system for the operation of one or more parcel compartment systems.

On page 1, after line 9 please insert a heading as follows:

Related Technology

The paragraph beginning on page 1, line 18 has been changed as follows:

~~The applicant uses logistic~~ Logistic systems ~~especially~~ can be used for the distribution of letters and goods shipments (packages, parcels), transportation receptacles, pallets and containers. Here, the appertaining logistic systems preferably serve to distribute shipments between a sender and a recipient, whereby, for example, important criteria are those having to do with the transportation speed, the use of warehouses and vehicles as well as the transmission of shipment data.

On page 2, after line 19 please insert a paragraph as follows:

In order to process information, process control computer systems with process control computers are known in which external events trigger a response by the process control computer. Examples of industrial applications for the use of process control computers are the control of machines, the automation of processes, the acquisition of operating data and quality control.

The paragraph beginning on page 2, line 20 has been changed as follows:

German Utility Model 201 03 564 U1, for example, discloses a system for delivering and receiving shipments which is particularly suitable for e-commerce. The system comprises several automatic delivery machines (ADM) into which shipments are deposited and from which they are picked up. The system also ~~comprises~~ includes a LAMIS server-computer program for handling the operations of the system.

On page 2, after line 24 please insert a paragraph as follows:

U.S. Pat. No. 5,051,914 describes a system for creating batches of mail for which a postal service provider grants a postage discount to a customer on the basis of certain criteria. For example, a discount is granted for presorted mailings. The system provides that a central data processing unit is connected to several customer stations at which users generate mailings. The data processing unit receives shipment information from the individual stations which the central unit then processes in such a way that mail batches fulfill the requirements of an envisaged postage discount when they are dropped off at a mail processing station.

U.S. Pat. No. 5,068,797 likewise discloses a system for optimizing the shipment of mail batches. In an embodiment of the system, it is possible, for example, that information is transmitted from the data processing unit to a processing station by e-mail. On the basis of

the information, the mailings can be printed out and processed. In this case, the processing station is located near a mail depot so that the generated mailings can be dropped off directly at the depot. This eliminates the need for the transportation of mailings from a user to the processing station.

U.S. Pat. No. 5,072,401 discloses a system for the controlled drop-off of mailings in which a postage discount is likewise granted to a user under certain conditions. The system is supposed to bring about savings in terms of the transportation and sorting procedures without entailing additional effort for the sender. Since the senders cannot at all times be aware of all of the requirements for receiving postage discounts, the mailing information is processed in a central data processing unit.

WO 96/20952 A2 discloses a system for pre-processing documents. Within the system, at an administrator, there is a central computer that has a storage medium comprising at least three different storage areas. The storage areas can each be used by registered database users in order to store templates, documents or responses.

On page 2, after line 24 please insert a heading as follows:

SUMMARY OF THE DISCLOSURE

The paragraphs beginning on page 2, line 25 have been changed as follows:

~~The objective of the invention is to provide~~ disclosure provides a method for data transmission between a parcel compartment system and at least one central data processing unit within a logistic system for the operation of one or more parcel compartment systems that ensures effective communication between the components. In this context, the logistic system should be able to comprise one or more transportation and delivery companies that

have access to the compartments of the parcel compartment system and the logistic system should comprise one or more registered users.

Moreover, ~~it is the objective of the invention to provide~~ disclosure provides a system for carrying out the method.

According to the ~~invention~~ disclosure, ~~this objective is achieved in that~~ events at the parcel compartment system are evaluated by ~~means of~~ a communication device, after which said communication device transmits function messages associated with the events to the data processing unit, whereby the data processing unit carries out the corresponding functions and, if applicable, sends data back to the communication device of the parcel compartment system.

The ~~objective is~~ disclosure also ~~achieved by~~ provides a system for carrying out the method.

A description will be given below of especially preferred embodiments of method sequences of the communication procedure, which can be implemented particularly advantageously in such a logistic system ~~comprising~~ including one or more parcel compartment systems and at least one data processing unit.

BRIEF DESCRIPTION OF THE DRAWINGS

Advantages, special features and advantageous embodiments of the ~~invention ensue from the subordinate claims and~~ disclosed method and system follow from the ~~presentation below~~ following description of preferred embodiments making reference to the drawing figures.

The figures drawings show the following:

Figure 1 - a schematic depiction of data transmission within a logistic system for the operation of parcel compartment systems;

Figure 2 _ the communication sequences during the delivery of a parcel by a delivery agent without an associated payment procedure;

Figure 3 _ the communication sequences during the delivery of a parcel by a delivery agent with an associated payment procedure;

Figure 4 _ the communication sequences during the delivery of a small packet by a delivery agent;

Figure 5 _ the communication sequences during the delivery of a parcel by a delivery agent of a logistic provider;

Figure 6 _ the communication sequences during the removal of a parcel with an expired storage period by a delivery agent;

Figure 7 _ the communication sequences during the unscheduled removal of a parcel by a delivery agent;

Figure 8 _ the communication sequences during the delivery of a return parcel by a delivery agent;

Figure 9 _ the communication sequences during the delivery of a parcel by a B2B recipient;

Figure 10 _ the communication sequences during the pick-up of a parcel or small packet by a recipient without an associated payment procedure;

Figure 11 _ the communication sequences during the pick-up of a parcel by a recipient with an associated payment procedure;

Figure 12 _ the communication sequences during the pick-up of a B2B parcel by a recipient;

Figure 13 _ the communication sequences during the retrieval of personal data;

Figure 14 _ the communication sequences during the blocking of accounts;

Figure 15 _ the communication sequences during the time synchronization;

Figure 16 _ the communication sequences during the checking of the validity of profiles;

Figure 17 _ the communication sequences during the checking of the validity of recipient information;

Figure 18 _ the communication sequences during the downloading of user profiles;

Figure 19 _ the communication sequences during the query about the filling status of compartments by logistic providers;

Figure 20 _ the communication sequences during the query of request intervals.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

Especially preferred embodiments ~~of the invention~~ will be described on the basis of the drawing figures and description.

The ~~invention~~ disclosure relates to the communication sequences during the exchange of information between a parcel compartment system and at least one central data processing unit of a logistic provider. Such parcel compartment systems or machines are operated, for example, by a postal service provider for registered users for whom a delivery agent deposits parcels or other shipments into a compartment of the system. Drop-off as well as pick-up procedures can be carried out not only by the postal service provider that operates the logistic system but also by other affiliated companies that are granted access to components of the logistic system, including the filling of the parcel compartments.

The paragraph beginning on page 5, line 1 has been changed as follows:

Basically, the communication sequences according to the ~~invention~~ disclosure look like this:

1. Activities by delivery agents, customers or a timer at the parcel compartment system are events that trigger the transmission of function messages to the central data

processing unit. A communication device of the parcel compartment system evaluates the events and associates them with the appertaining function messages. A function message is present, for example, in the form of an XML file that is transmitted via an *http post request*. However, other formats can also be used. In an especially preferred embodiment ~~of the invention~~, the function message consists of a function name and a set of parameters.

The paragraph beginning on page 5, line 16 has been changed as follows:

3. If necessary, the parcel compartment system stores the data that is are sent back by the data processing unit.

The paragraph beginning on page 5, line 22 has been changed as follows:

The following table shows examples of various user roles within a logistic system. Each user of a parcel compartment system can assume one of these roles. The role determines the access rights to the system (parcel compartment systems and central data processing unit). The system ~~according to the invention~~ uses role identifiers (role ID) when it provides the parcel compartment system with user profiles. The designation DPAG, which stands for Deutsche Post AG, describes an example of a provider that operates a logistic system with parcel compartment systems. The designation B2B refers to a business-to-business system in which companies have access to compartments of the parcel compartment systems of the system operator. The designation Post24 stands for an example of a central data processing unit of the operating company.

The paragraph beginning on page 6, line 4 has been changed as follows:

The drawing in Figure 1 schematically describes the sequences within a logistic system that ~~consists of~~ includes one or more parcel compartment systems 20, each with a

communication device 21, with at least the central data processing unit 30, with various delivery agents 10 and with various users 40. The users are preferably registered users of the system. The delivery agents as well as the users have access to certain areas of the parcel compartment system as a function of the determination of their specific authorization. Such instances of access are, for example, events that are evaluated by the communication device 21 of the parcel compartment system in question. The communication device associates the appertaining function messages with the events and sends them to the central data processing unit 30. In this process, it is advantageous that additional data such as status codes and request IDs are transmitted.

The paragraph beginning on page 7, line 5 has been changed as follows:

The delivery agent 10 logs in at the communication device 21 of the parcel compartment system 20 and, in this case, deposits a parcel of the system operator. Preferably, data located on the parcel ~~is~~ are read in during this procedure. Such data ~~includes~~ include, for example, an Identcode of the system operator that is assigned to the parcel and which is scanned in. Moreover, a CustomerID can be read in. Through this event of depositing, communication is triggered back and forth between the communication device of the parcel compartment system and the central data processing unit. The communication device 21 evaluates the event and associates a function message with it. The function message is transmitted to the central data processing unit and on this basis, the central data processing unit carries out the appropriate functions and, if applicable, sends data back to the communication device. The function messages can be transmitted individually or in batches. For example, the communication device transmits data such as the MachineID, the point in time of the depositing, the ParcelID, the parcel type, an Identcode, a CustomerID, various modes, the compartment type and the sender. Moreover, a company type can be transmitted.

This is advantageous if the parcel compartment system is used by several transportation and delivery companies that have access to certain compartments of the parcel compartment system.

The paragraphs beginning on page 9, line 9 have been changed as follows:

The delivery agent logs in, whereby the ParcelID, the compartment number, the CustomerID and/or the Identcode of the parcel are read in. He removes the parcel in question, all of the customer-related and parcel-related data ~~is~~ are deleted and the communication device 21 sends a function message to the central data processing unit to the effect that a parcel has been removed. Then the mode is set to 3 in order to indicate that there was an unscheduled removal of a parcel from the machine.

The communication sequence in Figure 8 describes the sequence for the removal of a return parcel by a delivery agent 10. The delivery agent logs in and requests the next return parcel. If there is a return parcel in the parcel compartment system, then he opens the appropriate compartment and removes the parcel. At this time, all of the data relating to this parcel and to the appertaining customer ~~is~~ are deleted from the machine. The communication device 21 sends a function message to the central data processing unit to the effect that a return has been removed. Then the mode is set to 4 in order to indicate that a return parcel has been removed from the machine 20.

The paragraph beginning on page 10, line 1 has been changed as follows:

The communication sequence shown in Figure 10 describes the sequences during the pick-up of a parcel of the system operator by a recipient 40 (DPE). The system operator can be, for example, a company such as Deutsche Post AG, so that such a recipient is designated as DPE in the figures. The recipient 40 logs in with his CustomerID and a pick-up PIN, after

which the communication device 21 sends a function message to the central data processing unit in order to request a profile. As its response, the central data processing unit transmits the release status, among other things. If the release status is positive and if the CustomerID as well as the PIN are valid, the appropriate compartment can be opened and the recipient can remove his parcel. The machine 20 sends to the central data processing unit the appertaining data as well as the information that a parcel has been picked up and all of the customer-related and parcel-related data is are deleted from the machine. If either the release status is negative or if the CustomerID and/or the PIN are not correct, then advantageously, the recipient is shown an error message and the compartment cannot be opened.

The paragraph beginning on page 12, line 3 has been changed as follows:

Various errors can occur during the communication between the parcel compartment system and the central data processing unit. These include especially connection errors, data processing errors or problems in executing the business logic. A function message always comprises a sending component and a receiving component. Each of these components can be a communication device 21 of a parcel compartment system 20 or a central data processing unit 30. Several function messages with parameters are preferably combined to form one single request. In order to reliably execute the communication, each request that is transmitted by a parcel compartment system or by the central data processing unit should be confirmed. It has proven to be advantageous that, as a response to a function message, a status code is sent that represents either an error code or a code for the success of the request for each function message. If the function message requires the receipt of data in return, this these data can be transmitted together with the status code.